



PowerBay Medium Current BDFB POWER DISTRIBUTION SYSTEMS

FEATURES

- Internal high current copper bussing
- Flexible/configurable load distribution
- High density bus options
- Circuit breaker distribution panel options
- High power density
- Small footprint
- Industry leading in terms of amps-per square-inch of distribution capacity
- Single, dual, triple, or quad bus configurations
- Advanced supervisory and control systems
- Ease-of-installation
- Integrated, scalable, upgradable, and quick availability system configuration

The Comm/net Systems (CSI) PowerBay family of DC distribution cabinet products are the industry leading power distribution systems available today. With the highest current-per-square-inch footprint, the PowerBay product family includes power source, high current and medium current distribution systems configured in very high-power density small-footprint cabinet systems.

PowerBay systems include innovative, integrated monitoring systems with a digital communications bus for all power source and distribution device interconnections that provides advanced user interface and remote web server and SNMP status monitoring.

Integrated Load Monitoring Per Device Channel

All circuit breakers in the CSI PowerBay product family feature current monitoring per channel with local and remote monitoring of load per breaker and total bus load to allow for accurate determination of status and remaining power capacity. The supervisory control module provides advanced data acquisition and indication of status per load device. Local OLED and LCD displays provide load status at a glance with accurate and effective power measurement and display. Circuit breakers are managed in device “inventory” that tracks actual measured load amperage and constantly compares this against the breaker installed amperage rating minus 80% de-rating specification. Local and remote alerts are issued when measured load exceeds the 80% threshold of breaker rating. This feature prevents outages by providing an alert prior to an overload condition that will eventually result in a breaker trip and power failure to critical communication network load devices.

An Industry First — A/B Redundancy Tracking And Monitoring

Patent pending RT® Redundancy Tracker provides continuous monitoring of A/B redundant load distribution and provides local and remote alert when power system ability to provide redundant power from sole distribution source is about to be lost. This extremely valuable feature protects the reliability of communications sites by ensuring that redundant power distribution is always maintained and load is not added in excess of the system ability to support it with full A/B redundant capacity.

Medium Current Distribution Power Distribution BDFB Cabinet Systems

The CSI PowerBay BDFB bay is available in an industry leading small footprint/high power density design with many available configurations of load protection device options as well as integrated advanced digital monitoring features.

Internal Copper Bussing

The PowerBay system includes nickel-tin plated high ampacity laminated copper bussing with stainless steel hardware for the maximum possible power distribution in small spaces with low internal conduction losses. Vertical internal termination panel bussing rated at 1200 amperes provides ability to distribute high current from rectifier/energy storage/PDF support systems to PowerBay BDFB distribution circuit breaker panels and to communications network equipment loads.

Flexible/Configurable Load Distribution

The PowerBay BDFB is configured with internal bussing and the ability for the customer to “mix-and-match” load devices both in the initial order configuration but later as well to provide a valuable scalable upgrade path for future installation of load distribution devices as required with device load growth. This provides a “future proof” feature to allow installation of the PowerBay BDFB with future retrofit of load devices when they are needed and when they are defined as to circuit breaker choice as well as ampacity.

High Density Bus Options

The CSI PowerBay BDFB is available in dual, triple or quad bus configurations to allow flexible power routing and capacity management as well as to provide appropriate power density to site “high power load zones” such as CMTS and Router locations, Optical transport and VOD systems etc. The vertical copper bussing segregation provides for cable feeder lug landing per bus, integrated return busses, current measurement per load bus and per breaker. Each load bus can feed multiple CSI distribution circuit breaker panel options in a “mix-and-match” configuration with high user flexibility. Scalable design allows for low cost “empty” cabinet installation and then field upgrade of appropriate breaker panel selections later when load growth supports installation of circuit breaker panel configuration. Industry leading design that is future proof and flexible for the uncertainty of today’s communication site growth trajectory. CSI manufactures multiple choices of circuit breaker panels for High, Medium and Low current per channel that can be installed in each of the main internal BDFB buss configurations.

Circuit Breaker Distribution Panel Options

The PowerBay BDFB can support installation of high power density magnetic trip circuit breakers from 5A to 600A via installation of the CSI HDDC, GJX or HDX circuit breaker panels. Configurations include AM series low-medium current breakers in single-pole from 5A to 100A and two-pole up to 200A that can be installed in the HDDC or HDX circuit breaker panels. They feature per breaker integrated load current measurement and supervisory control interfaces per breaker panel with VFD display user interface and digital integration with other load devices in the cabinet. The cabinet supervisory controller provides cabinet summary status and remote Ethernet interface for web server and SNMP remote monitoring support. Circuit breakers are magnetic trip, include monitoring of breaker trip/off status. CSI RT™ redundancy tracking technology provides pre-trip alarm warning when measured load exceeds 80% of trip rating and when BDFB bus loading is approaching non-redundant status.

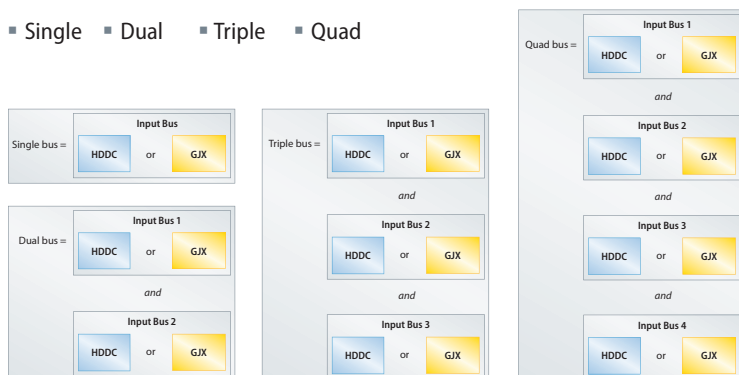
BDFB Distribution Circuit Breaker Panel Choices

- **HDDC distribution center:** 3RU, 300A, and 22 AM breaker positions
- **GJX distribution center:** 5RU, 1200A, and 10 GJ breaker positions
- **HDX distribution center:** 2RU, 400A, and 16 AM breaker positions

Available circuit breaker ampacity options: 5A–125A single pole and 150 and 200A dual-pole AM series breakers for the HDDC/HDX panels, 125A–250A single-pole and 300A and 400A dual-pole GJ series breakers in the GJX panel.

BDFB Bus Choices:

- Single
- Dual
- Triple
- Quad



High Power Density

The PowerBay cabinet footprint is only 23.5" wide x 30" deep x 7' tall which is industry leading in terms of amps per square inch of distribution capacity. Large feeder cable entry and cable management features allow for single, dual, triple or quad bus configurations and very high power density in terms of both the total cabinet ampacity as well as the quantity of circuit breaker channels per bus and per cabinet.

Advanced Supervisory And Control Systems

The PowerBay BDFB cabinet includes a comprehensive and integrated load monitoring and status acquisition system which leads the industry in terms of local and remote monitoring accuracy, detail and reliability enhancement. Each HDDC, HDX or GJX circuit breaker panel includes an integrated supervisory controller located on a flip up door panel that protects the circuit breaker cabinet area. The controller continuously acquires breaker load current, voltage and trip status and communications this on a per device basis via an internal digital communications bus to the cabinet supervisory controller which consists of a 2RU panel with high brightness LCD graphics display touch screen interface.



Figure 2. HDDC Supervisory Control Panel

Circuit breaker panel supervisory controllers each include a bright VFD graphics display for load current, breaker amperage installed rating, load versus trip rating ratio and overload pre-warning per breaker as well as RT redundancy tracking that calculates the maximum load allowable per breaker to maintain A/B redundancy. The controller

includes a control panel user interface that allows parameter entry, information selection and review as well as inventory programming for breaker ampacity. Each controller “talks” to the cabinet supervisory control panel to allow for total cabinet status to be displayed in a graphically organized and effective manner as well as to provide a master cabinet Ethernet interface that in turn provides local web server and remote SNMP alarm features for local facility and/or remote network operations center monitoring of status as well as distribution power capacity.

Ease-Of-Installation

All CSI BDFB cabinets have front access circuit breaker installation via AM series bullet terminal circuit breakers or front install access GJ circuit breakers. Additional circuit breakers can be added safely, quickly and easily as required without system shut-down. CSI BDFB’s do not require circuit breakers with internal auxiliary contacts unlike our competitors. This feature reduces cost, improves reliability and also allows for industry standard low cost magnetic trip circuit breakers to be used saving the operator time and money and avoids custom circuit breaker configurations that are only provided by one vendor which limits the procurement options of the customer.

Integrated, Scalable, Upgradable, and Quick Availability System Configuration

The PowerBay BDFB can be ordered factory direct from stock with a basic cabinet and power bussing configuration and installed in conjunction with CSI rectifier and energy storage systems for power plant deployment and then load devices can be populated later as required. The other option is to use our advanced web based product “configurator” to build your own custom implementation of the BDFB cabinet with selection of load bus configuration, and circuit breaker panels, and breaker ampacity choices and integrated supervisory monitoring system and order factory direct custom configured for your application. CSI stocks PowerBay BDFB cabinets in our regional warehouse locations for immediate delivery for fast track project response unlike our competitors who have long factory order lead-times.



Figure 2. Dual Bus BDFB Cabinet

About Comm/net Systems

Comm/net Systems, Inc. (CSI) is the leader in high power density communications power systems. Comm/net offers comprehensive power and communications site systems integration and deployment services via a national footprint of regional branch offices. Additional information can be found at www.commnetsystems.com.

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Order Information

Shipping box is packaged for UPS or FedEx shipment and includes an instruction manual and accessories.

